

PATENT  
Attorney Docket 5221.1US

NOTICE OF EXPRESS MAILING

Express Mail Mailing Label Number: EV348043745US

Date of Deposit with USPS: June 25, 2003

Person making Deposit: Laurence B. Bond

APPLICATION FOR LETTERS PATENT

for

**LOW IMPACT EXERCISING METHOD AND APPARATUS**

Inventors:  
Stephen R. Spencer  
James G. Felt

Attorney:  
Laurence B. Bond  
Registration No. 30,549  
Bradley B. Jensen  
Registration No. 46,801  
TRASKBRITT  
P.O. Box 2550  
Salt Lake City, Utah 84110  
(801) 532-1922

TITLE OF THE INVENTION  
LOW IMPACT EXERCISING METHOD AND APPARATUS

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of U.S. Provisional Application Serial No. 60/391,368 filed on 25 June 2002.

BACKGROUND OF THE INVENTION

[0002] Field of the Invention: The present invention relates generally to exercise in a low impact environment and, more particularly, to a method and apparatus for improving strength, balance and cardiovascular endurance using a low impact surface such as, for example, a trampoline or foam pads.

[0003] State of the Art: Low impact exercising devices including devices employing a low impact surface such as, for example, a trampoline or foam pads, have been used to improve strength, balance and cardiovascular condition of individuals during recovery from various types of injuries including lower extremity injuries. Such low impact exercises have conventionally been conducted in a single plane, for example, by running or jumping up and down on the low impact surface. While running or jumping up and down on a low impact surface provides adequate entry level exercise, the ability to effectively increase the intensity and variety of the workout has been lacking.

[0004] Often, users of such low impact exercising equipment will rapidly accommodate the low level of intensity offered by such equipment and then simply discontinue the exercise. By discontinuing the exercise, and without additional rehabilitation or preparation following an injury to the lower extremity, individuals attempting to, for example, run up or down a hill, traverse a hill or traverse an uneven playing surface will find these seemingly normal activities difficult at the least, and may actually re-injure themselves in attempting to do such activities.

[0005] It would, therefore, be advantageous to provide an apparatus and method for exercising in a low impact environment at an increased level of intensity. It would further be advantageous to provide an apparatus and method for exercising in a low impact environment which allowed movement and provided resistance in a variety of planes. For example, it would

advantageous to assimilate a variety of planes with an infinitely variable intensity by coupling one or more resistive elements to the user during exercise on a low impact surface. Additionally, it would be advantageous to provide a method of, and an apparatus for, exercising in a low impact environment which is relatively inexpensive and simple to use.

### SUMMARY OF THE INVENTION

**[0006]** In accordance with one aspect of the present invention, an exercising device is provided. The exercising device includes a low impact cushioned, resilient surface for an individual to stand on and run, walk, jump or otherwise exercise. A fixed structure is located adjacent the low impact surface with the first end of a resistive element being coupled thereto. A harness is coupled with a second end of the resistive element such that an individual wearing the harness becomes subjected to a resistive force as they move away from the fixed structure.

**[0007]** In accordance with another aspect of the present invention, a method is provided for low impact exercising. The method includes providing a low impact cushioned, resilient surface and a fixed structure at a location adjacent the low impact surface. The method further includes coupling a resistive element between the fixed structure and an individual such that a resistive force is exerted upon the individual in the general direction of the fixed structure while the individual walks, runs, jumps or otherwise exercises on the low impact surface.

### BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

**[0008]** The foregoing and other advantages of the invention will become apparent upon reading the following detailed description and upon reference to the drawings in which:

**[0009]** FIG. 1 is a perspective view of an individual on an exercise device according to an embodiment of the present invention;

**[0010]** FIG. 2 is an elevational view of the exercise device shown in FIG. 1;

**[0011]** FIG. 3 is a top plan view of the exercise device shown in FIG. 1;

**[0012]** FIG. 4 is a partial elevational, sectional view of the fixed structure of the exercise device;

**[0013]** FIG. 5 is a partial sectional side view of the fixed structure of the exercise device illustrating a first attachment of the resistive element; and

**[0014]** FIG. 6 is a partial sectional view of the fixed structure of the exercise device illustrating an alternative attachment of the resistive element.

#### DETAILED DESCRIPTION OF THE INVENTION

**[0015]** Referring to FIGS. 1 through 3, an exercise device 100 is shown according to an embodiment of the present invention. The exercise device 100 includes a low impact exercising surface 110 shown in the form of a trampoline. The trampoline includes a frame 109 having a plurality of upstanding legs 111 attached on its lower surface. The frame 109 is connected to a exercise surface 110 by means of a plurality of elastic connection members 115 which may be metal springs. The panel surface 110 may be fabricated from an elastic fabric material. However, the low impact exercise surface 110 may include other structures besides the trampoline. For example, the low impact surface 110 may include a pad of foam or foam rubber-type material which provides a desired level of pliancy and elasticity. The low impact surface 110 desirably provides a cushioned, impact-absorbent and resilient surface for an individual to run, jump or perform other similar activities on.

**[0016]** In use, an individual stands on the low impact surface 110 and attaches a harness 112 such as a waist belt. A resistive element 114, such as an elastic or bungee-type cord, is coupled between the harness 112 and a fixed structure located adjacent the low impact surface 110. Thus, in the exemplary embodiment, a column 116 or similar member may be structurally fixed to the frame 118 of the trampoline (which, in the exemplary embodiment, acts as the low impact surface 110) providing a point of attachment for the resistive element 114. However, it is noted that the column 116 might be replaced by some other structure such as, for example, an existing wall having one or more coupling locations for secure attachment of the resistive element 114.

**[0017]** The resistive element 114 may be attached to any of a number of locations 120A-120D on the column 116 thereby enabling a user to simulate different exercises. For example, by coupling the resistive element 114 to the lowermost location 120A, a user may simulate the climbing of a hill while, on the other hand, by coupling the resistive element 114 to the uppermost location 120D a user may simulate the act of descending a hill. The use of a resistive element 114 in conjunction with a low impact surface 110 increases the intensity of a

user's workout and provides resistance multiple planes rather than just an up-and-down motion as with prior art devices.

**[0018]** It is noted that more than one resistive element 114 may be used to increase intensity of the workout as shown in FIGS. 5 and 6. Also, if more than one resistive element 114 is used, the resistive elements 114 may be attached to the same or to different locations 120A-120D of the column 116 or fixed structure. For example, as shown in FIG. 5, one resistive element 114B might be attached to the lowermost location 120B while a second resistive element 114A might be attached to an elevationally higher location 120A.

**[0019]** Furthermore, additional attachment locations may be provided which are horizontally displaced from those shown in the exemplary embodiment. For example, a second and/or third column might be attached to the frame 118 of the trampoline (e.g., in the corners 122A and 122B) to provide alternative or additional attachment locations for the resistive element(s) 114. Alternatively, a cross member 116A as shown in FIG. 5 may be used to provide additional attachment locations. The ability to use multiple, strategically arranged resistive elements 114 may be beneficial in targeting a particular muscle or muscle group during a rehabilitation process.

**[0020]** The resistive element 114 may be attached to the harness 112 using any of conventional means known to those of ordinary skill in the art. For example, the resistive element 114 may be coupled to a ring or other fastening member 124 on the harness 112 using a snapping fastener 126, a carabiner or the like. The opposing end of the resistive element 114 may be attached to the column 116 in a similar manner.

**[0021]** In the exemplary embodiment, if so desired or needed, additional weight can be added to the exercise device 110 in a weight compartment 16 formed within, or otherwise coupled to the frame 118 of the trampoline. The additionally weight acts as a stabilizer by helping to counteract the force applied to the frame 118 via the column 116 and attached resistive element 114.

**[0022]** While the invention may be susceptible to various modifications and alternative forms, specific embodiments have been shown by way of example in the drawings and have been described in detail herein. However, it should be understood that the invention is not intended to be limited to the particular forms disclosed. Rather, the invention includes all modifications,

equivalents, and alternatives falling within the spirit and scope of the invention as defined by the following appended claims.